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E D I T O R I A L

On these pages the editor offers his opinions, unshackled by advertising patrons and unrestrained by anything save a sense of the decent and the truthful. The editor, alone, is responsible for their type, their tone and their tenor.

A DECLARATION OF INDEPENDENCE

(In Vital Crude Drugs)

DURING the First World War, America suffered immensely for a time because of a shortage of medicinal and other chemicals, notably the dyestuffs. Necessity however begat prompt invention and while the fighting nations of Europe were maintaining their mischief America turned to her own manufactures. No longer willing to be hog-tied to Germany in the matter of organic chemicals of all kinds, her Chemical Foundation resolved to make a bid for an all-time independence in the manufacture of dyestuffs and in such drugs as the coal tar antipyretics, the organic arsenicals, etc.

And when the so-called peace of Versailles was signed (and ever since) this independence has been an actuality.

So well did the great American firms formulate and further their plans that Germany, even after peace had come, and in spite of her low wage scale, had not a chance in a million of returning to her profitable monopolies.

Today, with the cauldron in Europe again cruelly and wantonly seething, our textile industries are scarcely affected. Their colors, their chemicals and their staples are so routinely made here now that the industries hardly know the existence of the second silliness. When Italy sneaked into the fray her new and promising Lanital (artificial wool) business at once stopped, and almost instantly from New England came Aralac, a product similar in identity, but vastly better than Lanital had ever been.

In America today we are making *better* organic medicinals, *better* industrial chemicals, *better* plastics, *better* volume dyestuffs and *better* artificial staples, largely because of other peoples' wars.

The first world war not only challenged our initiative and enterprise—it *actually* stimulated and fostered an inventive genius and productive capacity.

The second world war will send us still farther along in progress.

In one particular *necessity* we are however *NOT* independent.

We could be!

We should be!!

It is in the matter of crude drugs!

Think of it, our national stocks of belladonna, hyoscyamus, squill, valerian, aconite and other European-grown and imported drugs are on the verge of exhaustion. And we have continuously less chance of replenishment. Prices are ten and twenty-fold what they were a year ago. Sick persons are being denied needed medication for we have no available replacements for these important remedials.

We were equally stirred over kindred shortages during the first world war, but we tackled the more important jobs then and recognized that grown drug replacement was a long range and tedious proposition.

With digitalis we were successful. Oregon and Washington now grow this vital drug, and although much remains to be learned about drying and storing domestic digitalis, the supply has been good and ample. But there still remain many equally important drugs, capable of being grown here, and so necessary to the welfare of our people that we should somehow find a way to have them *always* available.

The large pharmaceutical houses have made sporadic efforts to grow them.

But it is not up to them to stake the bill. They are already making the most substantial contributions to real research in medicinals.

Growing necessary crude drugs, in order to be totally independent of the totally undependable European sources of supply should be a function, fostered by and furthered by our National Government—not in a half-hearted way, but in a manner certain of success.

Brains of the New Deal.

Spades of the W. P. A.

Why not use them thus?

IVOR GRIFFITH.

ORIGINAL ARTICLES

THE PHARMACOPOEIA AND THE STATE DRUG CONTROL OFFICIAL*

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ALTHOUGH the United States Pharmacopœia is a volume of equal importance to all those engaged in any activity of a pharmaceutical nature, its significance varies somewhat among the several groups who have occasion to use it. To the practicing physician it is a ready source of reliable therapeutic agents, to the retail pharmacist it is primarily a book of formulas, to the teachers in schools of pharmacy it is a basic text book, and to the pharmaceutical chemist a useful compendium of identification tests, assay methods, and other pertinent information. To the State Drug Control Official, however, it has still another significance, it is a book of legal standards upon which the major portion of his activities are based.

Both the original Federal Food and Drugs Act of 1906 and its successor, the Federal Food, Drug and Cosmetic Act of 1938, have included in their definition of the term drug, "articles recognized in the official United States Pharmacopœia," and hold such an article to be adulterated "if it purports to be or is represented as a drug the name of which is recognized" in the official United States Pharmacopœia, "and its strength differs from or its quality or purity falls below, the standard set forth" therein. As the laws controlling drug products of many of the States are patterned after one or both of these Acts, the importance of the Pharmacopœia in the control of drugs becomes at once apparent. The Maryland Food and Drugs Act reads in part, under Section 190, "the term 'drug' shall include all medicines and preparations recognized in the United States Pharmacopœia" and under Section 191, "an article shall be deemed to be adulterated—in the case of drugs: If when a drug is sold under or by a name recognized in the United States Pharmacopœia . . ., it

*Presented at the Pre-Convention Conference of the United States Pharmacopœia.

differs from the standard strength, quality or purity as determined by the test or tests laid down in the United States Pharmacopœia . . ."

Federal control of drug products differs from State control in many ways that need not be discussed here. It is sufficient to remember, that as the Governmental agency is concerned primarily with unbroken packages in interstate commerce, and as the State's authority is limited to preparations produced or sold within its boundaries, the problems of the two agencies are somewhat dissimilar. The former generally deals with the large manufacturer and producer while the latter has more direct supervision over the retail pharmacies, "drugless" drug stores, and other agencies dispensing medicines to the consuming public. As a result of this condition the State's control of drug products is as a rule exercised over numerous lots of medicines prepared in relatively small quantities, and dispensed through many outlets.

The criteria employed to ascertain the purity, quality and strength of any Pharmacopœial preparation are the tests and assays provided for that preparation by the Pharmacopœia, and such criteria have all the force of law. It is most necessary therefore that not only should the soundness of every test and every assay procedure be carefully verified, that the physical constants and other data be adequately checked, but that the very language itself of a monograph be meticulously scrutinized before it is adopted. The Pharmacopœia is the absolute arbiter, the *sine qua non,* of the drugs and medicines which it recognizes and describes; if its statements are in error then that error is perpetuated in law. The assumption of such unlimited authority carries with it a commensurate burden of responsibility; the Pharmacopœia cannot, must not, err. The influences of such a valuable and important volume on the mechanism of drug control is best illustrated by a few pertinent examples.

The Pharmacopœia, in the monograph on Linimentum Camphorae, states that "Camphor Liniment contains in each 100 Gm., not less than 19 per cent. and not more than 21 per cent. of camphor." In the routine control of official medicines this product is occasionally examined for its compliance with the standard. Should a sample be obtained whose camphor content failed to fall within these limits, that sample is considered illegal, regardless of whether the failure is caused by a deficiency or an excess of camphor. Does this condemnation by a State Official mean that such a liniment is worthless, dangerous, or harmful to health? Not necessarily. It would be

rather difficult to demonstrate that a preparation containing 20 per cent. of an active ingredient is more or less satisfactory than one containing 18 per cent. or 22 per cent., particularly when that preparation is employed for external application. The absence of such a demonstration, however, need not disturb the control official in the least. His action is completely justified and is based on the following premises. He knows that in the interest of consistency and uniformity it is necessary to have a standard for the camphor content of Camphor Liniment. He knows, furthermore, that this important matter of establishing standards and limitations for active medicinal ingredients has been delegated to a group of scientists, pharmacists, physicians, chemists, pharmacologists, and others, who are experts in their respective fields, and whose judgment and efforts are aided by research data of the highest quality. His duty, therefore, is simply to enforce the law. The higher duty, the heavier responsibility rests on the shoulders of those who create the Pharmacopœia.

The Pharmacopœia provides assay methods to enable the State Official to evaluate a recognized product and to ascertain whether or not it conforms to the standards established for it. When these assay procedures are incomplete, vague, or unworkable, the Control Official is, to that extent, limited in his enforcement of the law. To illustrate: the Pharmacopœia in the monographs on Liquor Iodi Compositus and Tinctura Iodi provides an assay for potassium iodide which is, in fact, a total solids determination. Although in the former case it is stated that the residue "should respond to the identity and purity tests under Potassii Iodidum," and in the latter case "to the tests for identity" found under the same compound, such measures do not eliminate the possibility of incorporating substantial amounts of material other than potassium iodide.

In the United States Pharmacopœia XI there appeared an assay for Powdered Extract of Hyoscyamus which provided for the digesting of an approximate amount of sample with two immiscible solvents, for an indefinite time, subsequent filtration of this mixture through wetted cotton, and washing of the cotton until free from alkaloids. When an attempt is made to follow these directions an emulsion of the two immiscible solvents occurs, the cotton being wet with one of the liquids is almost impervious to the other, and to aggravate this condition, the powdered extract forms a mat on the cotton preventing further filtration or washing. This made the assay very difficult, if not actually unworkable, and it was not until it was revised in the

second supplement some three years later that the official assay could be applied to this galenical.

In the United States Pharmacopœia XI there appeared an assay for Spirit of Camphor, which besides being practically unworkable, called for the use of an amount of sample twelve times in excess of that which should be used with the amount of reagent provided. Until certain changes were made in the first, and again in the second supplement, this anomaly remained the legal assay.

The individual requirements in a Pharmacopœial monograph should be consistent among themselves, the assay should evaluate the drug in terms of its accepted therapeutic agent, and the standards provided for a natural product should be sufficiently broad to include the major portion of that product in production. These conditions are amply illustrated by the monographs on Oil of Chenopodium. The United States Pharmacopœia X permitted this oil to contain any amount of ascaridol from 65 to 100 per cent., limited the specified gravity to from 0.955 to 0.980 at 25 degrees C., and included an assay for ascaridol, which in many cases measured only a portion of that constituent. Furthermore, many normal oils, collected as authentic samples at the stills, while having a specific gravity of 0.950 or better, and containing 65 per cent. ascaridol when evaluated by other methods, did not meet the minimum specific gravity requirement of 0.955. On the other hand the redistilled oils, rich in ascaridol, could not be called legal because their specific gravity exceeded the maximum figure of 0.980, and their color was deeper than the pale yellowish tint ascribed to the official oil. The Committee of Revision, considering this monograph, made the following changes which now appear in the United States Pharmacopœia XI. Realizing that the United States Pharmacopœia X assay was inaccurate and did not quantitatively evaluate ascaridol, but being desirous of retaining it, they dropped all mention of ascaridol and established a rubric of 60 to 80 per cent. of "an acetic acid-soluble fraction" which is what the assay measures. They also decreased the minimum specific gravity value to 0.950 at 25 degrees C. and eliminated the maximum limit. The result of this curious set of changes is the following. A high test oil that was unacceptable under the United States Pharmacopœia X standards because of its specific gravity but acceptable by assay, under the United States Pharmacopœia XI standards now has an acceptable specific gravity but is unacceptable by assay! Furthermore, the change

in the rubric and the wording of the assay prevents the evaluation of ascaridol, the active therapeutic agent of the oil. This creates an embarrassing situation for the control official because these standards are his law and he must abide by them regardless of their idiosyncrasies. It may not, however, create a difficulty for the large oil user. He may appraise the oil by other methods, and if satisfied with its quality, buy it. Such a departure of legal standards does not, however, make for a wholesome relationship between the enforcement agencies and the dealers in drugs, nor does it enhance the standing of the Pharmacopœia among the commercial handlers of official medicines.

These are a few of the difficulties which arise when legal standards are not complete and accurate in every detail. From them it may be noted how important, significant and all embracing is the Pharmacopœia to that State Agency charged with enforcing the standards of purity, quality, and strength for official medicines. If an error occurs in the Pharmacopœia, the physician may ignore it, the pharmacist correct it, the teacher explain it, but it remains for the State Drug Control Official to defend it as though it were the very essence of truth.

THE ARITHMETIC OR THE STATISTICS OF GERIATRICS

By T. Swann Harding

Granite Gables, Falls Church, Va.

ONE of the most irksome things about living a long time is that you tend to grow old. About the time you have learned how to live you start falling to pieces. While it is true that you begin to die the day you are born, your organism manages for a while to overbalance its tendency towards disintegration with a tendency to grow and have life more abundantly. But just as sure as you stick around long enough the disintegrative processes surpass those that fight for more abundant life and, in every case so far, they finally win out.

That is to say you die. Or else you think you are dead, and there are usually plenty of people around willing to dispose of your body, including the morticians. Generally speaking that tends to happen around the Biblical three-score-and-ten, or it has so nearly happened by then that the victim wishes the process would go on to completion and get him out of his misery.

Yet we read that Claudius Hermippus lived to be one hundred and fifteen, as a result of inspiring the breath of young girls. How did he do that and who was he anyway? He apparently was the one-eyed Athenian who wrote forty plays of which we have only fragments, who is said to have been a bully and a coward, who caroused while the Lacedaemonians invaded Attica, who accused Aspasia of impiety, and who attacked Hyperbolus. He also wrote scurrilous iambic poems after the manner of Archilochus, who wrote satire himself and probably deserved no better than he got. Hermippus appears to have lived a full and a vivid life, but whether he was worth the breath of all those young girls remains an unsettled question.

However, that gets us almost nowhere. Did Hermippus live and maintain reasonable health until he was one hundred and fifteen? About ten years ago the "experts" were discovering two things about modern people. One was that, while the doctors had managed to stay the ravages of diseases that carry off the young, they had done almost nothing to prolong and protect the lives of middle-aged people. The other was that we were tending to become a Nation of oldsters.

That trend continues unabated. Because modern medicine has been effectual in warding off the diseases of infants and youth more individuals attain age forty than ever before. But no greater percentage of those who reach forty attain eighty than did a generation or two ago. Life expectancy at birth has increased markedly; life expectancy in middle age is about what it was before medicine made its advances.

In the old days children used to outnumber people in late middle and old age. If the reverse is not already true it soon will be. In 1929 George Newman of the British Ministry of Health predicted this would be true in that country in 1941. We haven't long to wait and see, unless the War upsets everything.

There is no doubt that life cycles may lengthen—when viewed statistically, and statistics always give you an out of any tight place. Since Lincoln's time average longevity has become greater in the entire civilized world, but that doesn't help middle-aged people a bit. The emphasis is usually so placed that the individual in mature life fancies that he himself may somehow contrive to live to some phenomenal age. Not only does scientific knowledge vouchsafe us nothing very promising here, but the past is pretty unanimous in the assurance that the span of human life has seldom if ever exceeded a hundred years.

To be sure you have read and heard about people who lived for a century and a half. You have also read and heard about haunted houses, methods of reducing excess weight, balanced budgets, and other wonders. Furthermore, some individuals almost certainly have lived five or ten years past the century mark—attributing their great age to abstemious habits, to a placid disposition, or to the intemperate consumption of coffee, tobacco, and alcohol and indulgence in violent rages, as may be the case.

There are also historical records, not to mention primitive folklore. Nearly all primitive peoples looked back upon long-lived generations in the remote past. The Christians, by way of the ancient Hebrews, have been no exception; they are merely pikers.

Whereas Methuselah failed to make his one thousand years flat, the literature of ancient India tells us it was not at all uncommon for their sages of the early days to live 80,000 years. Indeed in the really flourishing and more salubrious periods of East Indian antiquity, 100,000 years seemed to have been about the average span of life, at least among the upper crust.

Babylonian tablets in cuneiform character also go the Jews a little better for they tell of ten kings who reigned an aggregate of 432,000 years, which averages out at about 43,200 years per king. No doubt the people became fairly well fed up on kings who lived so long, but there was little that they could do about it. It certainly makes a third term look like a mere trifle.

Of course these were predeluge records, for the Babylonians had a world flood of their own, which certain despicable higher critics have been unkind enough to maintain was the flood somebody later stole and slipped into Genesis. Be that as it may, eighty-six post-flood Babylonian kings are recorded as having ruled only about 780 years apiece, so decadence was setting in. The immediate five successors to these royal worthies dropped to reigns of from thirty-five to forty-eight years and scarcely merit serious consideration for longevity.

The ages of the Old Testament patriarchs (excluding Enoch who lived out the remainder of his life elsewhere than on earth) ranged from 777 to 969 years. Genesis vi 3 says that man's span of life is normally a hundred and twenty years but this later dwindled, or something, to such ages as 969 for Methusaleh, 950 for Noah, 600 for Shem, and 438 for Arphaxad. Four to six generations later it had slipped to Abraham's mere hundred and seventy-five years and Joseph's scant hundred and ten.

Moses also lived to be but a boy of a hundred and twenty, and Aaron was cut off in his adolescence at one hundred and ten. David was actually described as "old and stricken in years" at seventy, which puts him in a class far beneath that of my own father.

Enoch, the eldest son of Cain (Genesis iv 17-8), or the seventh in descent from Adam (Genesis v 24)—both statements are true as Bible—"was not, for God took him, in his three hundred and sixty-fifth year"—a grave misfortune to a man out for a longevity record. Seth was born the first time in Genesis iv 25-6, but for the second time—and no doubt with revised technique as Adam was by then one hundred and thirty years old himself—in Genesis v 3-8. Seth begat Enos, when a skittish he-flapper of one hundred and two, and he ultimately dropped off at 912—though counting from which birth we know not.

In the Book of Adam and Eve, which dates between 500 and 900 A. D., Seth is described as "perfectly beautiful, like Adam, only more beautiful." He must have been quite a chap. Ecclesiasticus

(xviii 6) decided that a mere hundred years would be plenty for man while the composer of Psalm 90 sang of the three score and ten which has retained popularity to date. In these estimates modern science concurs.

In 1696 William Whiston, successor to Sir Isaac Newton as Lucasian professor of mathematics at Cambridge, published a delightful treatise to explain this striking decline in human longevity. According to Thomas Young this Whiston "advocated a Universal Deluge," and "calculated" that it was produced by a passing comet which came in contact with the earth November 28, 2349 B. C.

Whiston was somewhat inaccurate. For Dr. John Lightfoot, vice-chancellor of Cambridge University, an eminent seventh-century Hebrew scholar, proved that the world was only created on October 23, 4004 B. C., at 9 A. M., and anyway Whiston forgot the hour of the deluge. But he claimed that man's temper differed markedly in those early days before whatever deluge there was.

For man then lived in a perpetual equinox. The temperature was balmy and equable, the air was pure, there were no germs, meteors, thunderings, lightnings, pestilences, infections, or motor cars. There were even no heavy rains. For water fell as gentle mist or vapor and pneumonia was simply unknown. Man was a vegetarian. He had never heard of pyorrhea, halitosis, chronic intestinal stasis, or acidosis. In short everything conduced to longevity records and man naturally set out and made good ones.

Many other writers heartily defend this thesis, or parts of it. Buffon postulated that the earth was softer in those days and that all vegetation and animal creation was tender and succulent as well. Hence bones were more pliable and took longer to harden. In fact a man could not enter advanced adolescence until he was about a hundred and twenty which, multiplied by seven, gives a life expectancy of about 900 years. But as the earth became solid and the plants less succulent things hardened up in general. By David's time seventy was a good old age.

According to Thomas Burnet, antediluvian longevity was providentially arranged for the purpose of rapidly propagating the human species. But the Divine Essence underestimated man's procreative capacity and soon had to flood his creatures out and cut the life span because there was no longer standing room on His Footstool.

St. Augustine did not hesitate to bring Virgil to testify to great ages of the ancients. Virgil tells about a huge mass of rock which,

he said, twelve men of his time could not move, but which a single ancient warrior had readily hurled at his enemies in the golden age. If things like that were common then, why couldn't men have lived to be 900 years old—asks St. Augustine? Would anyone care to answer Prof. Quizz?

Coming to more recent times the most notable case of great age possibly concerns Thomas Parr. But, despite Parr's appearance in history as notable only for his long life span, W. J. Thomas explodes the story in his Human Longevity: Its Facts and Fictions (1873).

Parr no doubt did live to be a hundred or a bit more. But he was supposed to have been born in 1483 and to have died in 1635. This record, however, rests exclusively upon the lucubrations of one John Taylor, who published a doggerel history of Parr in 1635 but furnished no factual proofs. Thomas could find no corroborative information despite long search. The entry of Parr's date of birth stood aloofly along. His age record rested entirely upon his own unsupported personal assertion, and the lusty credulity of his hearers.

Thomas Harvey, who proved the circulation of the blood, performed an autopsy on Parr but said nothing in his report about Parr's exact age save that friends who accompanied him to London declared him to be one hundred and fifty-two. Harvey described the vigorous condition of Parr's viscera as unusual in an "aged individual," and made a further detailed report that has its esthetic deficiencies, and is often positively unappetizing.

Then there was Henry Jenkins, said to have been born in 1501 and to have died in 1670. The earliest account of him is that of Miss Ann Savile, composed about 1662, and upon her unsupported testimony rests the statement that Jenkins lived one hundred and sixty-nine years. How did she know? Jenkins told her so! She took up her residence in Bolton, Yorkshire, and was at the time informed that a male resident of the parish had attained the age of one hundred fifty-nine.

Jenkins later visited Miss Savile's sister to beg and Miss Ann thereupon implored him by all that was good and holy to say how old he was. He swore. He paused and he calculated. He probably swore a good deal. Then he finally decided he must be a hundred and sixty-two or sixty-three at the least reckoning. Upon this unsupported assertion by a senile old billygoat after a handout rests the fabric of his term of life. Jenkins could neither read nor write. The

parish register does not record his age at death and he thus vanishes into the pale limbo of pretension with many others of his kind.

Catherine, Countess of Desmond, was presumed to have died in 1694 at the dead ripe age of one hundred and forty. But it appears that she became inextricably confused with an earlier countess of the same title and that her sum total bears a deduction of at least forty years in the interests of veracity. This discounts it to the plane of scientific probability.

There are many other cases but on critical examination all of them go smash insofar as they concern ages much in excess of a hundred and five. Raymond Pearl in his Biology of Death deflated many of these tall stories of great age, among them one concerning a flippant old liar of Kentucky said to be a hundred and thirty-one years old about 1920. He would at times remark "Maybe I'm 200 years old; I don't know." His youngest child was fifty-two and his eldest seventy-five. He was supposed to have been a father at a hundred and twenty-five and he doubtless was a hundred or a little more.

In case you would like to live as long as he did it is rather disconcerting to know that he had no fixed habits. His vegetable consumption was limited to cabbage, corn (part in liquid form) onions, sweet potatoes, potatoes and beans. He drank sweet milk or buttermilk, but little coffee or tea, and had a dram of liquor a day. As to his belated paternity—recent times have indicated that successful fatherhood may occur even a little after seventy.

Despite scientific investigations reference books still record that Petraz Gzarten of Hungary died in 1724 at the age of 185, the fact having been fully authenticated, if you can call it that, by his ninety-five-year-old son. Semi-historical folklore also tells us of Joseph Surrington, a Norwegian peasant who was said to have died at a hundred and sixty and to have left offspring aged nine to one hundred and three.

Then there was the curious individual found in a New Jersey almshouse in 1904 who claimed to be a hundred and thirty-two. But no record of birth could be produced. The man said he had enlisted in the U. S. Navy in 1809 but the records of the Navy said 1839. He entered the almshouse in 1870 giving his age as fifty-nine; he was probably somewhere in his early nineties.

There was reported in the press of May 29, 1936, however, the death from a broken leg of one Solomon F. Rickner, said to have

been the oldest person in Nebraska and possibly in the United States. If he was a hundred and fifteen as claimed he surely won the loving cup. His reputed age was said to have been authenticated by records which satisfied a lawyer interested in legal matters concerned with settling an estate. His actual age therefore depends upon how easy a certain lawyer was to satisfy.

This individual's father was reported to have lived to one hundred and two and his mother to ninety-nine—ages that are plausible enough, while he said his grandfather sat him on his knee and told him about being a soldier with Washington at Valley Forge. Mayhap. Anyway, in case you want to become that old, this elderly relic drank beer, used tobacco, and absorbed also eight to ten cups of coffee daily. His daughter thought that was too damned much coffee and said it was sure to kill him some day, and probably it did. He claimed the high cost of living, which restricted his diet to simple foods, prolonged his life!

Broadly speaking, the phenomenally long lives appear to have begun, or to have been lived out, in countries or among people where errors as to age could readily occur. The most notable example recently, the bouncing chap of a hundred and fifty or more who appeared in this country a few years ago was, it will be remembered, a Turk. Long lives are signally associated with poverty, illiteracy, and unreliable birth records and census reports.

Every census taken in this country, for instance, indicates a disproportionately large number of persons of such ages as seventy-five, eighty, eighty-five, ninety, ninety-five, and one hundred. The proportion reported for ages below or in between these round figures is correspondingly small. Mathematically such a situation is impossible. It merely indicates carelessness or deliberate falsification on the part of many who answer census questions.

Again, the census of 1910 indicated that there were 3300 centenarians in relatively illiterate Rumania out of a population of eight millions. Bulgaria with a population of only about four millions claimed the same number of centenarians as Rumania. The same year Great Britain reported 94, France 164, Germany 76, and the United States only 40 centenarians—out of populations much larger than those of the two Balkan states put together.

It is obvious that the more accurate the records of death and birth, and the more reliable the census data, the fewer people of one hundred there are in the countries concerned, in proportion to total

population. Age records are easily falsified. Birth and baptismal certificates are often lacking among the poor who rather consistently make most of the old-age records.

Family Bibles are almost extinct, but their records never were highly reliable. The evidence of other long-lived people is invalid because it is based on the assumption that their own ages equal or surpass that of the person about whom they give testimony. Even a death certificate may err. As for tombstones, as Dr. Johnson said: "in lapidary inscriptions a man is not under oath." Both intentional jests and the abrasions of time may modify the words or figures.

Whereas approximately 5000 persons in our population will ordinarily claim to be one hundred years old most of them are mistaken—often honestly so. The average life expectancy still hovers around seventy years though nutrition scientists tell us it could be prolonged at least to seventy-seven if we would tank up carefully on calcium, vitamins A and G, and the right kind of protein. At least diets like this prolonged life and deferred senility in rats!

If man was a flatworm he might do something about his life span. He could partly dry out after starving himself, grow smaller, and become young again; later when circumstances were more propitious he could remature. The cells of his body tissues are immortal even now. But he, himself, complex organization of widely differentiated tissues that he is, is far from that.

For man had to sacrifice relative immortality to become the complex living machine he is. His tissues are highly differentiated. Once a kidney cell always a kidney cell is the rule within him. Division of labor is very rigid within his organism and his cells show extreme reluctance to return to an embryonic stage—save in cancer, when he would vastly prefer they did not de-differentiate.

It has been estimated that man might live a thousand years at a very low temperature which would slow down all his bodily processes. But it would be a mighty dull life—something like perpetual hibernation for a bear. The grip of man's thyroid upon his metabolism is also such that if it slows him down only a few per cent. in his rate of living he runs complaining to his physician. If it slows him down thirty or forty per cent. he becomes a cretin or a submoron.

If man deprives himself of food he incontinently starves to death. He painfully lacks the ability to rejuvenate himself also by a process of internal reorganization known to the caterpillar who

utilizes it to become a butterfly. Hence the man of one hundred and fifty simply is not as old as he thinks he is.

Science has fairly well established the normal life span as roughly five times the period it takes the animal to cease growth and to complete normal epiphysis. That gives a dog ten to twelve years, a lion twenty, a horse twenty-five, and man a hundred as an outside limit. Among lower invertebrates a hundred years is about tops too; insects have a maximum life span of seventeen years, fish of about two hundred and sixty, amphibia about thirty-six, birds a hundred and eighteen, mammals a hundred years, and reptiles have possibilities up to a hundred and seventy-five.

In the not too distant future it may be possible for us, with scientifically regulated nutrition and medical care, to stretch that maximum of a century to one hundred and twenty-five years. Then there will be more skittish oldsters of eighty-odd than there are now. But that is about all science can promise us and it seems we must just make up our minds to get along with this as best we can.

Sulfamethylthiazole and Sulfathiazole Therapy of Gonococcal Infections. J. F. Mahoney, R. R. Wolcott and C. J. Van Slyke. *Am. J. Syphilis Gonorrhea Venereal Diseases 24,* 613 (1940), through *Squibb Abstr. Bull. 13,* 1315 (1940). Sulfathiazole was employed in the treatment of 106 cases of gonorrhea in men. Of these 79 were observed for a sufficiently long time to judge results. The rate of cure was 91.1 per cent., the results being as good in patients who had previously failed to respond to sulfanilamide as in patients having no previous treatment. Sulfamethylthiazole, on the other hand, in a series of 136 cases gave cures in 92.1 per cent. of previously untreated cases, but only 53 per cent. cures in those already treated with sulfanilamide.

The authors recommend the choice of sulfathiazole inasmuch as sulfamethylthiazole gave more toxic reactions, notably peripheral neuritis.

NEWS ITEM

Philadelphia College of Pharmacy and Science Announces Third Annual Seminar on Modern Pharmaceutical Practice

FOR the third time in as many years, the Philadelphia College of Pharmacy and Science is making available to any graduate in pharmacy a brief but thorough review of the latest developments in that profession, and in chemistry, bacteriology, biology and other sciences related to public health. The three-day seminar will be held at the College on Monday, Tuesday and Wednesday, January 27, 28 and 29, 1941, at which time the mid-year recess of regular classes will allow the members of the Faculty to devote their entire time to these lectures and laboratory demonstrations, all of which will be entirely new this year.

Practicing pharmacists and others, graduates of recognized colleges of pharmacy anywhere, wishing to keep abreast of the rapid advances in the healing arts, may come to Philadelphia for these three days for a quick and comprehensive summary of these developments. Those who attend will also be given an understanding of the sources to which a pharmacist, busy in his own store, may turn for information on problems arising from day to day in prescription practice.

It is possible to compress this review into a three-day period by rigid exclusion of all but the most essential and significant information. Graduates in pharmacy have the basic scientific knowledge necessary for a ready understanding of the latest developments.

As in preceding years, this seminar will include not only the lectures and demonstrations but also lunches and dinners during the entire period, thus affording the registrants and the faculty members opportunity for informal discussion.

An all-inclusive registration fee of $10 provides for lunches and dinners, notebooks and comprehensive notes, and other essential material.

Commencing Monday morning, January 27, and continuing through Monday afternoon and evening, Tuesday morning, afternoon and evening, and Wednesday morning and afternoon, the program will include the following subjects:

"The Newer Technical Formulas," by Dean Ivor Griffith.

"Modern Methods of Drug Application," by Professor Linwood F. Tice.

"The Pharmacist and the Pharmacy in Community Health Protection," by Dr. E. Fullerton Cook.

"The Chemistry of Some of the Newer Drugs," by Dr. Arthur Osol.

"The Therapeutics of Some of the Newer Drugs," by Dr. Horatio C. Wood.

"Making Use of New U. S. P. and N. F. Drugs," by Professor Adley B. Nichols.

"Approved Prescriptions of Modern Medical Practice," by Professor Harvey P. Frank.

"Current Problems in Drug Store Management," by Dr. Paul C. Olsen.

"The Biology of the Endocrines," by Dr. Marin S. Dunn.

"Present Day Sources of Crude Drugs in the United States," by Professor William J. Stoneback.

"The Never Knowledge in Bacteriology," by Dr. Louis Gershenfeld.

"Tomorrow's Pharmacy—Profitably Professional and Esteemed," by Dr. John N. McDonnell.

In addition, there will be a prescription forum conducted by Professor E. E. Leuallen. There will also be laboratory demonstrations in manufacturing pharmacy, biology and botany, micro-analysis and synthetic organic chemistry, and avian embryo researches. Additional features will be interesting scientific motion pictures, round table discussions, and question and answer periods during which registrants may present for discussion their own specific problems. How the new Food, Drug and Cosmetic Act affects the pharmacist will also be discussed.

Graduate pharmacists who are interested in attending this seminar should communicate immediately with the Registrar of the Philadelphia College of Pharmacy and Science, Forty-third Street, Kingsessing and Woodland Avenues, in Philadelphia, Pa.

BOOK REVIEW

Done by persons, unafraid to upbraid, but perfectly willing to give praise where praise is really due.

Applied Pharmacology. By Hugh Alister McGuigan, Ph. D., M. D., F. A. C. P. The C. V. Mosby Co., St. Louis, Mo. 914 pages including index, 41 illustrations. Price: $9.00.

This text on pharmacology appears to be quite well written and its title is well chosen since it is indeed pharmacology in the applied sense. There is today two entirely different means of approach to the subject of pharmacology. One is concerned almost exclusively with relating chemical constitution with effect on normal animals or animals with induced abnormalities. The other is more the study of the use of various drugs in the treatment of disease. This present work is of the latter type.

It is quite apparent that this treatise on pharmacology is of greatest value to those interested in the more practical aspects of drug application such as the physician, nurse and professional pharmacist rather than to the experimental pharmacologist.

The subject matter is well organized and sufficient physiology is presented throughout the text to assist one in understanding without further reference the apparent mechanism of the various pharmacologic reactions which are presented.

There are, in addition, some abbreviated pharmaceutical chapters that may assist those not specifically trained in this field.

L. F. TICE

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TITLE AND SUBJECT INDEX FOR 1940

(A)—Abstract
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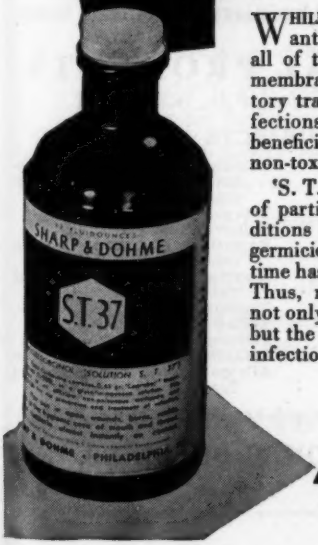
(S)—Solid Extract

An Aid to the Natural Defense Mechanism . . .



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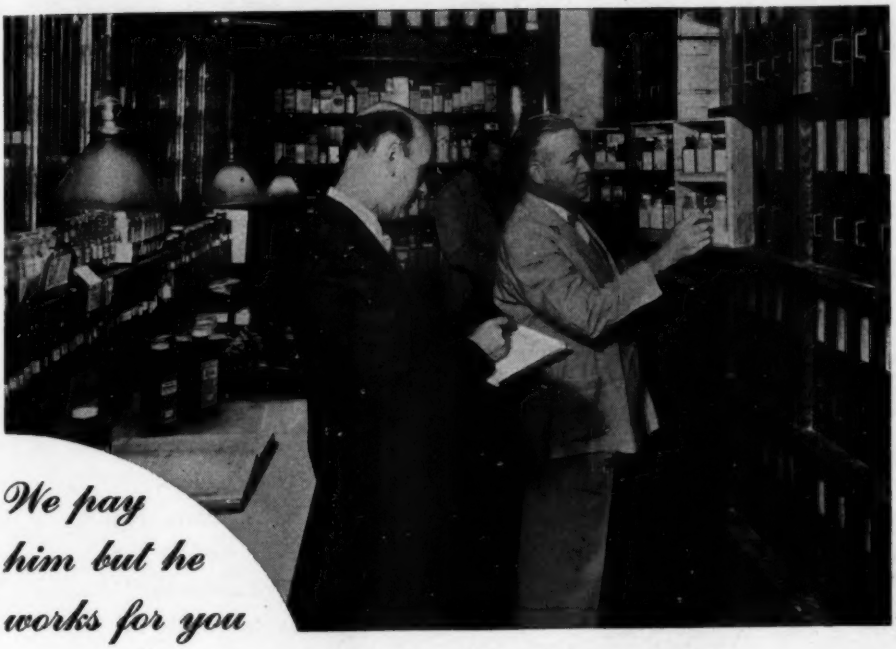

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